

successive October days rambled over what must have been bleak and desolate hills where now stands the city of San Francisco. They were both fresh from university halls, and, as young men of promise, had received appointments from the Russian Emperor to accompany Lieutenant Kotzebue on his voyage of discovery. Eschscholtz was surgeon and zoologist to the expedition, Chamisso was botanist, and upon their return from the voyage, Chamisso made known to the botanical and floricultural world the most beautiful of their new acquisitions, the California poppy-like flower, dedicating it to his friend and companion of the voyage, the young Dr. Eschscholtz.

Berkeley, Dec. 3, 1890.

HISTORICAL NOTE ON THE MONTEREY CYPRESS AT CYPRESS POINT

HARRY ASHLAND GREENE

In the Cypress Grove, at Cypress Point, Monterey, there are 10,550 cypress trees, including those growing along the "Seventeen Mile Drive" strip between the main grove and Pebble Beach, which property is being sold for residence purposes. Leaving out the strip mentioned, the grove occupies about 50 acres. To arrive at the number of trees I divided the territory into seven sections, counting each separately. There are 2700 cypresses fringing the shore eastward from the main grove, in the strip referred to, thus leaving 7,850 trees in the 50 acres, other than saplings. Throughout the territory are surveyors' stakes and a new road has been built eastward through the grove. At a point where the cypresses terminate somewhat abruptly some clearing has been done. Many years ago I urged that the pines be cleared away there and back into the grove. It is now evident that, had this been done, there would be many more cypress trees in that area than there are now. Our short-lived tolerant pines have not only choked out the young cypresses but the mature ones have destroyed many cypress trees in falling, even large ones.

I have a personal acquaintance with all the cypress trees in the grove having any right to claim distinction. Some of them I have known for nearly forty years, particularly one which I named Octopus. I am willing to believe that this most distorted of all trees on earth is 1,000 years old, and that there are older ones in the grove. A tree sawn off at the ground many years ago is still lying sound and looks as if it might have lived 10,000 years; on counting its rings only 184 were found.

I wanted to believe that there are cypresses in our grove at least as old as the Christian Era, but my conscience forced me to join the ranks of the conservatives. Of course such persons are quite unpopular in this region and the tourist is regularly furnished with one or the other most wonderful stories of how and when the grove was planted by man. The age of the oldest trees is given to travelers as from four to eight thousand years.

A number of the old trees, back among the pines, have been hollowed by fire. One hollowed tree is about 70 feet high and measures

18 feet, 8 inches in circumference breast high. It is still in fair condition. Another cypress, growing about 1,000 feet from the ocean shore and which shows no mark of fire, has a girth, breast high, 15 feet, 4 inches with a spread of 90 feet in one direction and 75 feet in the other. At the ground, including the roots, the tape measure showed 34 feet as its circumference.

When we were trying to have the Cypress Point grove made into a National Monument its land value was deemed insignificant; at the present time villa sites, with shore frontage, are held at ten thousand dollars per acre.

Monterey, November 16, 1921.

PHYSIOLOGICAL BILABIATION AND PHYSIOLOGICAL IRREGULARITY IN THE FLOWERS OF CALIFORNIAN ANGIOSPERMS.—I

WILLIS LINN JEPSON

In laying down principles of classification and phylogeny in the field of the Angiosperms it is taken as an axiom that regular (actinomorphic) corollas are to be regarded as representing a more primitive state than irregular (zygomorphic) corollas. Such an axiom may be defended, in part, on the grounds of the general morphology of the flower in connection with the morphology of the angiospermic plant as a whole. The cases of teratology in which highly irregular flowers become regular or sub-regular also bear on this matter. Reference may be made, as an example, to the highly zygomorphic type of flower in *Scrophularia californica* Cham., which, at times, as an abnormal condition, becomes sub-regular.¹ Numerous other instances in the field of teratology might be given.

A long series of families of flowering plants as represented in California are characterized by regular corollas. In many of these families, more or less widely scattered phylogenetically, there is shown an evident tendency to exhibit species with irregular flowers, or even occasionally genera. The irregularity that is here under discussion is limited to what may be called physiological irregularity, that is those cases in which the parts of the corolla remain morphologically of the same size and shape, but the parts are so disposed as to form a flower that is in structure constantly irregular or zygomorphic. It has been my practice in the field to speak of this peculiarity as *physiological irregularity* or, in some cases, as *physiological bilabiation*. It is now proposed to describe and discuss various species which illustrate this condition.

Clarkia pulchella Dougl. is a not uncommon plant on openly wooded slopes in the foothills of California, usually growing in a soil where there is at least some surface woodland mulch. Long ago I had noted and described the four petals as spreading in pairs

¹ Cf. Jepson, *Erythea*, 7:123-127, fig. 3 (1899).